

## **Appendix D**

# **CBA Screening Methodology and Results**

# **Methodology for Phase 1 Screening of Projects**

This document describes the procedures, assumptions, and level of detail that the Study team will use for the Phase 1 CBA screening process.

## **List of Projects**

The list of projects was developed with input from the following sources: stakeholder interviews, public input, and a review of recent accident data. The list was reviewed, modified, and finalized by the STF and TAC at a meeting held on May 28, 2003. This final list of projects is what will be carried forward to Phase 1 screening.

## **Screening Factors / Attributes / Criteria Development**

For the CBA process to work effectively the Study team will gather data, and evaluate each project using common factors, attributes and criteria. The factors will be based on the project goals. For example, one of the project goals is to provide safe routes. Based on this goal safety would be a factor. Attributes are characteristics of one project. For example, the number of crashes at an intersection is one of its attributes. Criteria are guidelines that will be used to screen out projects. For example, no intersection should have more than 10 crashes per year would be a criteria.

There are three types of projects and there will be a separate set of factors, attributes and criteria for each project type. The project types are as follows: intersections, roadway segments, and truck routes. There will be 2 levels of evaluation that will occur prior to screening.

### ***Fatal Flaws***

First, each project will be evaluated for fatal flaws. In other words, does it meet the Study goals and objectives, and purpose and need for the corridor? If it does not, the Study team will recommend that the project be eliminated prior to the CBA process. The Study team will present their recommendations at the Phase 1 screening session to the CBA group for their approval before a project is removed from the list.

### ***Planning Level Data***

Second, after the projects are evaluated for fatal flaws the Study team will use planning level data provided by ITD to evaluate the feasibility and significance of the project, along with the severity of the problem that the project is intended to address. This evaluation of the available data will

result in the attributes that will be used in the CBA process. For example, one of the project goals is to correct dangerous intersections on state routes. Considering this goal and the available data (accident reports and statistics), the Study team will evaluate the data and end up with the following attributes: number of accidents, and severity of accidents.

## **Data Collection**

For Phase 1 screening the Study team will use data provided by ITD and other local sources, such as the Twin Falls Highway District, City of Twin Falls, and other study area communities as appropriate, local law enforcement, etc. The Study team will not conduct any field visits for additional data collection for Phase 1 screening. The analysis level of detail for Phase 1 screening will be a planning level evaluation of whether or not a problem exists at the identified location, a basic determination on the type of problem that exists and the feasibility of implementing the project. If a problem does not exist (perception issue) or implementing the project is not feasible (cost limitations or excessive environmental impacts) it is not necessary for the Study team to collect additional data or conduct extensive analysis for Phase 1 and the project(s) may be dropped from further consideration. Additional data collection may be necessary after Phase 1 screening to address STF or public comments and to support the increased level of detail needed for Phase 2 screening.

Phase 1 screening will take into account the following sources of data and input:

- 1) Accident Data
- 2) Available Traffic Volumes
- 3) Available As Builts for roadway sections
- 4) Land use and zoning maps
- 5) Travel Demand Model Output
- 6) AASHTO Design Guidelines
- 7) Origin and Destination Survey Data
- 8) Planning Level Cost Estimates
- 9) Input from Local Authorities, the Public, ITD, the STF, and the TAC
- 10) Professional Judgment

Certain analysis attributes will not be available for Phase 1 screening based on a lack of available data at this time. For example, intersections will not be able to be measured by Level of Service for Phase 1 screening. ITD has a limited number of peak hour turning movement counts available for the intersections on the potential project list. However, the majority of the intersections identified on the project list were identified as a potentially unsafe intersection. Therefore, accident reports and data that is available will be adequate to identify whether or not a problem exists and if further investigation is warranted after Phase 1 screening.

## **Phase 1 Screening**

The phase 1 CBA process will take one day to screen all of the projects. Projects will first be evaluated to make sure they meet the developed criteria. Projects that do not meet the criteria will be removed from the project list. Truck route alternatives will be evaluated based on their attributes and the group will determine which routes have an advantage based on those attributes. The group will determine how important each advantage is and ultimately develop a score for each alternative. Criteria will be developed prior to screening to determine the cutoff scores for an alternative to remain on the list and advance to Phase 2 screening. This list of feasible projects and truck routes will then be presented to the public and the STF for their input and approval. Based on their comments the Study team will further investigate each project to a greater level of detail. This will provide guidance as part of the more detailed screening in Phase 2, which will result in a prioritized list of most feasible projects and a designated most feasible truck route.



CBA Screening Level I Results

Project #		Criteria						Additional Comments
		Within The Project Study Area	Provides or contributes to safe and efficient connectivity to and between corridor communities	Provides or contributes to clear, safe and efficient regional travel	Provides or contributes to connections to the Twin Falls commercial / industrial area	Will correct or contribute to the correction of roadway deficiencies	Will have minimal environmental impacts (When compared to all other feasible alternatives that address the same problem or deficiency)	
	Intersections							
1	US 93 & 3700 North (Orchard Rd)	Y	Y	Y	Y	Y	Y	
2	US 30 & Locust St	Y	Y	Y	Y	Y	Y	
3	US 30 & 3100 East (Eastland Dr)	Y	Y	Y	Y	Y	Y	
4	US 30 & 3200 East (Hankins Rd)	Y	Y	Y	Y	Y	Y	
5	US 30 & 3400 East	Y	Y	Y	Y	Y	Y	
6	US 30 & SH 50 (Red Cap Corner)	Y	Y	Y	Y	Y	Y	
7	SH 50 & 3800 East (Rock Creek Rd)	Y	Y	Y	Y	Y	Y	
8	SH 74 & South Washington St	Y	Y	Y	Y	Y	Y	
9	Blue Lakes Blvd & Hayburn Ave	N	N	Y	N	Y	Y	Intersection deficiency is part of a different regional travel pattern. Outside the scope of this project.
10	Blue Lakes Blvd & Addison Ave	Y	Y	Y	Y	Y	Y	
11	Addison Ave & Washington St (West 5 Points)	Y	Y	Y	Y	Y	Y	Including 2nd Ave and S. Washington
12	Orchard Rd & South Washington St	Y	Y	Y	Y	Y	Y	
13	Orchard Rd & South Blue Lakes Blvd	Y	Y	N/A	Y	Y	Y	Not on a regional route / Not Applicable Criteria
14	East 5 Points Intersection	Y	Y	Y	Y	Y	Y	
	Roadway Sections							
15	US 93 - Additional passing lanes between SH 74 and Hollister (Including a review of intersection with 3500 N near canal crossing)	Y	Y	Y	N/A	Y	Y	Not near the Twin Falls Commercial / Industrial area. Not Applicable Criteria.
16	US 93 - Sight distance improvements between SH 74 and Hollister (Including a review of Intersection of 3500 N near canal crossing)	Y	Y	Y	N/A	Y	Y	Not near the Twin Falls Commercial / Industrial area. Not Applicable Criteria.
17	US 30 - Add rumble strips to the county road approaches at Hankins Rd, Eastland Rd, and 3400 East	Y	N	N	N	N	Y	Proposed improvement will not address deficiencies at any of the proposed intersections. Wrong application.
18	US 30 - Evaluate the speed limit between Eastland Rd and the junction with SH 50	Y	Y	Y	Y	Y	Y	
19	US 30 / SH 50 - Install continuous turn lanes at locations that currently do not have them (Kimberly Rd to the Hansen Bridge)	Y	Y	Y	Y	Y	Y	
20	SH 50 - Widen the Hansen Bridge from 2 to 4 lanes	Y	Y	Y	Y	Y	Y	
21	Local Roads - Add left turn lanes at canal crossings	Y	N	N	N/A	Y	Y	Not part of regional travel or connectivity. Consider at locations that intersect state or US routes.
	Truck Routes							
	Route 1 - US 93 north to intersection with SH 74, east on SH 74 to South Washington, north on S. Washington to Orchard Rd, east to Eastland Rd, north to US 30, east on US 30 to SH 50 to I-84	Y	Y	Y	Y	Y	Y	
	Route 2 - US 93 north to intersection with SH 74, east on SH 74 to S. Washington, north on S. Washington to Orchard Rd, east to Hankins Rd, north to US 30, east on US 30 to SH 50 to I-84	Y	Y	Y	Y	Y	Y	
	Route 3 - US 93 north to Intersection with Orchard Rd, east on Orchard Rd to Eastland Rd, north to US 30, east on US 30 to SH 50 to I-84	Y	Y	Y	Y	Y	Y	
	Route 4 - US 93 north to Intersection with Orchard Rd, east on Orchard Rd to Hankins Rd, north to US 30, east on US 30 to SH 50 to I-84	Y	Y	Y	Y	Y	Y	
	Route 5 - US 93 north to Intersection with SH 74, east on SH 74 to S. Washington, east on 3600 N Rd to Eastland Rd, north to US 30, east on US 30 to SH 50 to I-84	Y	Y	Y	Y	Y	Y	
	Route 6 - US 93 north to intersection with SH 74, east on SH 74 to S. Washington, east on 3600 N Rd to south extension of Hankins Rd, north to US 30, east on US 30 to SH 50 to I-84 (requires 2 new miles of road and a crossing over Rock Creek)	Y	Y	Y	Y	Y	N	There are other feasible alternatives with considerably less environmental impacts. Constructing a bridge across Rock Creek will be environmentally and cost prohibitive.
	Route 7 - US 93 north to Hollister, east on Foothills Rd to Rock Creek Rd, north to US 30, continuing north to SH 50 Junction, east of Hansen Bridge and I-84	Y	N	N	N	Y	N	This alternative does not provide connectivity to all corridor communities, is not efficient for regional travel, and does not provide the needed connections to the Twin Falls commercial / industrial area. Greater conflicts with Cottonwood Creek and McMullen Creek drainage. Bald Eagle associated with Cottonwood Creek.
	Route 8 - US 93 north to Hollister, east on Foothills Rd to Blue Lakes Blvd South, north on Blue Lakes to US 30, east on US 30 to SH 50 to I-84	Y	Y	N	Y	Y	Y	This route is not an efficient route for regional travel from the west. Does not provide the needed connectivity.
	Route 9 - US 93 north to Intersection with SH 74, east on SH 74 to S. Washington, east on 3600 N Rd to Blue Lakes Blvd, north on Blue Lakes Blvd to US 30, east on US 30 to SH 50 to I-84	Y	Y	Y	Y	Y	Y	
	Route 10 (Identified at Public Workshop #3)- US 93 north to intersection with SH 74, east on SH 74 to S. Washington, north on Washington (SH 74) to Minidoka, east on Minidoka to Kimberly (US 30), east on US 30 to SH 50 to I-84	Y	N	N	Y	N	N	This routes takes truck traffic into historic downtown. There are serious environmental impacts to the historic district with this alternative. One of the goals of the truck route is to remove truck traffic from the downtown area as much as possible. There are also geometric limitations at east 5 points intersection that limit this alternative as well.
	Route 11 (Identified at Public Workshop #3)- US 93 north to Intersection with 3400 N., east on 3400 N. to S. Washington, north on S. Washington, then continue on one of the other feasible routes to connect to US 30 / SH 50 and I-84	Y	N	N	N	Y	Y	This route is not an efficient route for regional travel from the west. Does not provide the needed connectivity.



Intersection Projects - Phase II Screening

Factors	Attributes	US 93 & 3700 North (Orchard Rd)	US 30 & Locust St	US 30 & 3100 East (Eastland Dr)	US 30 & 3200 East (Hankins Rd)	US 30 & 3400 East	US 30 & SH 50 (Red Cap Corner)	SH 50 & 3800 East (Rock Creek Rd)
Operations	Level of Service (LOS) Standards were: Arterials: C or Better Collectors: D or Better	Acceptable LOS	Acceptable LOS	Acceptable LOS	2023: 2 Movements Below Standards NB - F SB - F	Acceptable LOS	2023: 1 Movement Below Standards NB Left - F	Acceptable LOS
	Traffic Control	Two-Way Stop	Traffic Signal	Traffic Signal	Two-Way Stop	Two-Way Stop	Two-Way Stop	Two-Way Stop
	Geometric Review	All Directions Need Turn Radius Improvements	N/A	Meets Standards (Turning radius improvements are part of the current design / reconstruction project)	N/A	N/A	N/A	WB Right, EB Right, NB Right, NB Left, & SB Left Need Turn Radius Improvements
Safety	On HAL?	Yes	Yes	No	Yes	No	Yes	Yes
	Accident Report Review Notes (1999 through 2002)	8 Total 7 were WB crossing movements, 7 were driver error, 1 weather related	14 Total > 50% are EB / WB Left Turn related accidents	16 Total no trends observed	14 Total 14 were driver error, 10 were age related (<20 or >70)	8 Total 5 are N/S crossing movements, 8 are driver error	10 Total 3 were alcohol related	7 Total no trends observed
Recommendations		Intersection needs to be widened to improve the turning radius for all movements	Install Protected Left Turn Signal Phasing on US 30	No Action	Installation of a traffic signal in the near future will be warranted, continue to monitor for warrants	No Action (Installation of signals east or west of this location will provide better gapping)	A traffic signal will be required to provide an acceptable LOS in the future. A signal at this location will also help provide better gapping at 3400 E.	Increase turning radius for deficient movements to accommodate commercial vehicles

NB - Northbound  
SB - Southbound  
EB - Eastbound  
WB - Westbound  
NE - Northeast  
N/A - Not Applicable  
LOS - Level of Service



# Intersection Projects - Phase II Screening

Factors	Attributes	SH 74 & So Washington St	Blue Lakes Blvd & Addison Ave	Addison Ave & Washington St	Orchard Rd & South Washington St	Orchard Rd & South Blue Lakes Blvd	East 5 Points Intersection
Operations	Level of Service (LOS) Standards were: Arterials: C or Better Collectors: D or Better	Acceptable LOS	<b>2023: 6 Movements Below Standards</b> *EB Left - F WB Left - F WB Thru - F *SB Thru - F NE Left - F NE Right - F  <b>*2003: 2 Movements Below Standards</b> <i>Note: LOS standard reduced to D based on constructability and financial constraints per ITD</i>	<b>2023: 2 Movements Below Standards</b> EB Left - E SB Left - E  <i>Note: LOS Standard reduced to D based on constructability and financial constraints per ITD</i>	<b>2023: 2 Movements Below Standards</b> *WB - F EB - D  <b>*2003: 1 Movement below Standards</b>	Acceptable LOS	Acceptable LOS
	Traffic Control	Two-Way Stop	Traffic Signal	Traffic Signal	Two-Way Stop	Two-Way Stop	Traffic Signal
	Geometric Review	EB Left Needs Turning Radius Improvements	N/A	N/A	N/A	N/A	Meets Standards
Safety	On HAL?	No	Yes	Yes	Yes	No	No
	Accident Report Review Notes (1999 through 2002)	No accidents reported	<b>23 Total</b> SB drivers are confused about what lane to be in NB drivers are making illegal left turns	<b>6 Total</b> no trends observed	<b>12 Total</b> 8 are age related (<22 or >70), 1 alcohol related	<b>9 Total</b> 1 alcohol related, no trends observed	<b>13 Total</b> no trends observed
Recommendations		Increase the EB Left turning radius to accommodate commercial vehicles	<b>Add 1 Additional Lane in each direction</b> EB Left SB Thru ( <i>requires additional receiving lane</i> ) WB Left NB Thru ( <i>*requires additional receiving lane</i> ) NE Left / Thru ( <i>*requires additional receiving lane</i> ) <i>* Same receiving lane required</i> <b>Apply additional signing and striping to add directional clarification for SB and NB approaches. Add an additional signal pole in the north approach leg median to direct SB thru traffic.</b>	<b>Add either:</b> <b>1 additional laneEB Left Turn Lane</b> <b>or</b> <b>1 additional SB Left Turn Lane</b>	<b>A traffic signal will be required to provide the desired LOS in the future. Continue to monitor for warrants.</b>	No Action	No Action

NB - Northbound  
SB - Southbound  
EB - Eastbound  
WB - Westbound  
NE - Northeast  
N/A - Not Applicable  
LOS - Level of Service







CBA Screening Level II Results

Factors	Attributes	Route 1 - US 93 north to intersection with SH 74, east on SH 74 to South Washington, north on S. Washington to Orchard Rd, east to Eastland Rd, north to US 30, east on US 30 to SH 50 to I-84		Route 2 - US 93 north to intersection with SH 74, east on SH 74 to S. Washington, north on S. Washington to Orchard Rd, east to Hankins Rd, north to US 30, east on US 30 to SH 50 to I-84		Route 3 - US 93 north to intersection with Orchard Rd, east on Orchard Rd to Eastland Rd, north to US 30, east on US 30 to SH 50 to I-84		Route 4 - US 93 north to intersection with Orchard Rd, east on Orchard Rd to Hankins Rd, north to US 30, east on US 30 to SH 50 to I-84		Route 5 - US 93 north to intersection with SH 74, east on SH 74 to S. Washington, east on 3600 N Rd to Eastland Rd, north to US 30, east on US 30 to SH 50 to I-84		Route 6 - US 93 north to intersection with SH 74, east on SH 74 to S. Washington, east on 3600 N Rd to Blue Lakes Blvd, north on Blue Lakes Blvd to US 30, east on US 30 to SH 50 to I-84	
Connectivity	East to West Route Length	11 Miles		11 Miles		9 Miles		9 Miles		11 Miles		11 Miles	
	North to South Route Length	10 Miles		10 Miles		2 Miles Shorter	50	Same as Route 3	50	10 Miles		10 Miles	
	# of Stops (all stop signs and signals traversed)	4 Total - 2 2-Way, 1 4-Way, 1 Signal		6 Total - 3 2-Way, 1 4-Way, 2 RR		4 Total - 2 2-Way, 1 4-Way, 1 Signal		5 1/2 Total - 2 1/2 2-Way, 1 4-Way, 2 RR		4 1/2 Total - 2 1/2 2-Way, 1 4-Way, 1 Signal		3 1/2 Total - 1 1/2 2-Way, 2 Signals	
		2 Fewer (1 2-Way, 1 S/RR)	80			Same as Route 1	80	1/2 Fewer (1/2 2-Way)	25	1 1/2 Fewer (1/2 2-way, 1 S/RR)	60	2 1/2 Fewer (1 1/2 2-Way, 1 4-Way)	90
# of Turns	4 Total - 2 left, 2 right		4 Total - 2 left, 2 right		2 Total - 1 left, 1 right		2 Total - 1 left, 1 right		2 Total - 1 left 1 right		2 Total - 1 left, 1 right		
					2 Turns Less	80	Same as Route 3	80	Same as Route 3	80	Same as Route 3	80	
Safety	# of residences that front route	96		101		85		90		68		74	
		5 Less Homes	20			16 Less Homes	55	11 Less Homes	35	33 Less Homes	100	24 Less Homes	80
	# of at grade RR crossings	1		2		1		2		1		1	
1 Less Crossing		25			Same as Route 1	25			Same as Route 1	25	Same as Route 1	25	
Long Range Planning	Compatability with Future Land Use	Bad / Good		Bad		Bad		Bad		Best		Bad	
		Slightly less dense residential - future	10							Route goes thru a substantially less dense future residential development, more compatible with development plans	100		
Public Support	Anticipated public acceptance	Bad		Bad		Bad		Bad		Best		Good	
										Serving a current industrial area, public acceptance, least additional public impact	90	OK currently, deteriorates in future, truck utility / function will further deteriorate	45
Farmlands and Supporting Farm Operations	# of Displacements in Ag Zoning	1 to 3		1 to 3		0		0		1 to 3		1 to 3	
						1-3 less	15	Same as Route 3	15				
	# of Acres of Developed Agriculturally Zoned land taken	1.2 D		1.2 D		2 1 D		2 1 D		1.2 D		1.2 D	
		0.9 less Developed	5	Same as Route 1	5					Same as Route 1	5	Same as Route 1	5
	# of Acres of Undeveloped Agriculturally Zoned land taken	6.8 UnD		6.8 UnD		1.8 UnD		1.8 UnD		6.8 UnD		6.8 UnD	
					5 less UnDeveloped	5	Same as Route 3	5					
Residential Development	# of displaced Agricultural Related Businesses	1 (sheds)		1 (sheds) + 1 partial (2 Agri S Bldgs)		0		1 partial (Agri Service 2 Bldgs)		1 (sheds)		1 (sheds)	
		1 less partial	10			1 less full + 1 less partial	50	Same as Route 1	10	Same as Route 1	10	Same as Route 1	10
	Distance of Route within urban and rural residential zoning	5.6 Miles		5.6 Miles		9.3 Miles		9.7 Miles		5.1 Miles		5.8 Miles	
		4.1 Less Miles	80	Same as Route 1	80	.4 Less Miles	10			4.6 Less Miles	85	3.9 Less Miles	75
# of residential displacements in urban and rural residential zoning (within 15' of new ROW)	3		3		4		3		6 to 10		6 to 10		
	3 to 7 less	85	Same as Route 1	85	2 to 6 less	60	Same as Route 1	85					
Key Natural and Cultural Resources	# of Creeks / Streams Crossed or Adjacent	1 LL + 1 RC		1 LL + 1 RC		1 LL +1 RC		1 LL + 1 RC		1 LL + 1 RC (most sensitive xing)		1 LL + 1 RC (least sensitive xing)	
			3		3		3		3		Least Sensitive Xing	5	
	# of Historic Structures Removed	0		0		0		0		0		0	
	# of Parcels Impacted that have Historic Homes or Farmsteads	3H + 2F		3H + 2F		1H + 1F		1H + 1F		2H + 2F		4H + 2F	
1 less H Home		20	Same as Route 1	20	3 less H Homes, 1 less Farmstead	75	Same as Route 3	75	2 less H Homes	45			
Length of new disturbance to main irrigation system	20 Ft (1LL)		40 Ft (1 LL + 1P)		20 Ft (1LL)		40 Ft (1 LL + 1P)		20 Ft (1LL)		20 Ft (1LL)		
	20 Ft	0			Same as Route 1	0			Same as Route 1	0	Same as Route 1	0	
Environmental Justice Considerations	# of residential and business displacements in census blocks with high EJ pops	4R + 2B (Watkins Waste Water, J&L Sweeping)		4R, +1B (J&L)+2 partial (2 Bldg Ag Sv, Ind Storage Bldg)		4R + 3B (Motor Store, J&L, Watkins)		3R +2B (J&L, Motor Store) + 2 partial (2 Bldg Ag Sv, Ind Storage Bldg)		2R + 1B (Watkins)		1R + 1 Partial (Shed Gould)	
		1B + 2 partial B	15	2B (has 2 more partial takes)	25			1R + 1B (has 2 more partial takes)	20	2R + 2B + 2 partial B	45	3R + 3B (has 1 more partial)	75
	Distance of route traveling through existing developed residential areas in census block groups with high EJ pops (Shorter distance represents less cumulative effect on community cohesiveness from noise, air, pedestrian safety impacts of traffic in residential	2.6 Miles		2.7 Miles		1.8 Miles		4 Miles		1.8 Miles		1.8 Miles	
		1.4 less miles	25	1.3 less miles	25	2.2 less miles	40			Same as Route 3	40	Same as Route 3	40
	Distance of route directly serving business and industrial areas within census block groups with high EJ pops (Greater distance represents benefits to these populations)	1.8 Miles		3.9 Miles		1.8 Miles		3.9 Miles		3 Miles		2 Miles	
1.5 more miles		15	3.6 more miles	25	Same as Route 1	15	Same as Route 2	25			1.7 more miles	17	
Total Importance		393		268		563		428		685		547	
Cost		\$8,683,685.00		\$7,852,060.00		\$11,138,674.00		\$10,307,051.00		\$11,091,046.00		\$6,294,428.00	

LEGEND

Pivotal Cornerstone Advantage

Most Desirable Advantage

Least Desirable Advantage

No Measurable Differences